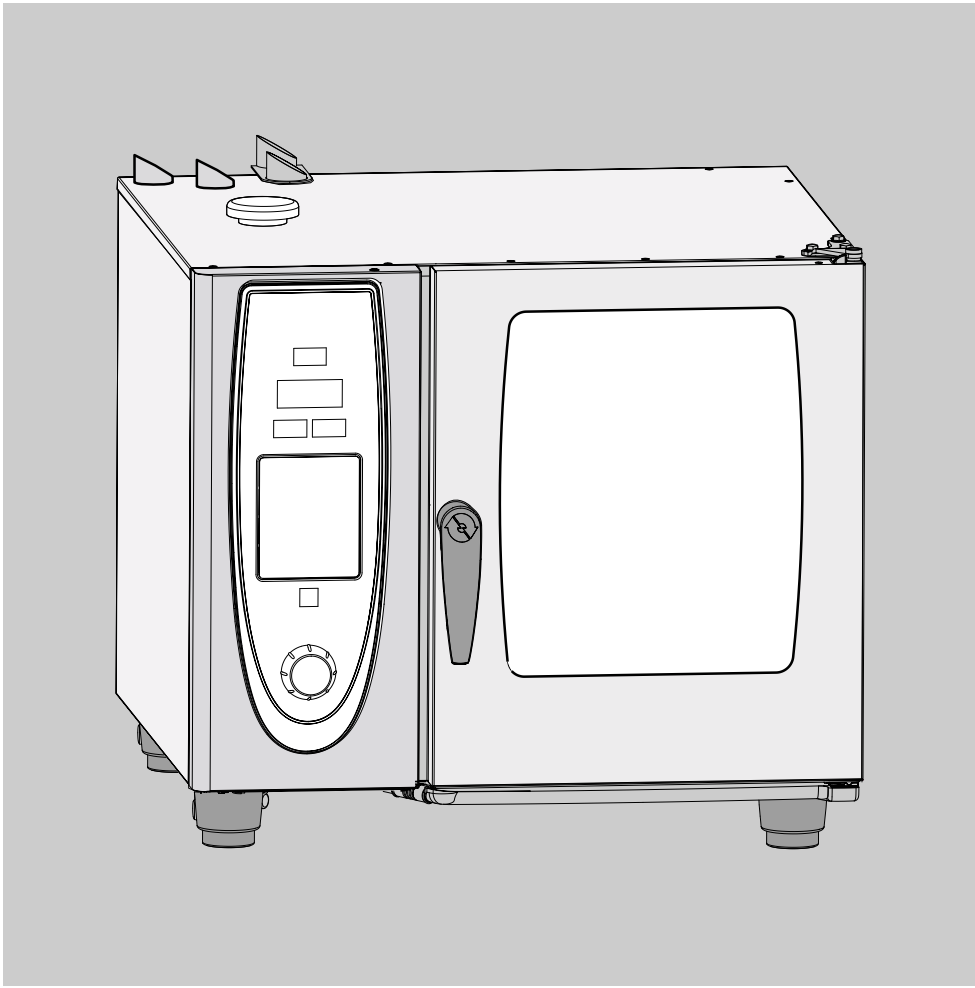
Installation Manual



Dear customer

You have a 12 month warranty from the date of your invoice.
The warranty excludes glass damage, light bulbs and sealing material as well as damage caused by improper use, maintenance, repair by untrained/unqualified personnel and scaling of components

Dealer

Installer

Quote in the event of a query:

Appliance model:

Appliance no.:

_____

Set to gas type:

_____

Your appliance was checked by:

_____

We reserve the right to make technical changes in the interest of progress!

Safety instructions

Warning
Incorrect installation, adjustment, alteration, service or maintenance can cause property damage, injury or death. Read the installation operating and maintenance instructions thoroughly before installing or servicing this equipment.
Warrenty service repairs shoud only be carrled our by approved service partners.

For your safety
Do not store or use gasoline or other flammable vapors or liquids in the vicinity of this or any other appliance.

What to do in the event of danger or if you smell gas:
- Shut the gas supply immediately
- Do not touch any electric control elements
- Make sure the area is well ventilated
- Avoid naked flames or sparking
- Use an external telephone to notify the appropriate gas supplier immediately (if the gas supplier is unavailable call the relevant fire station).

RESET GAS **rES**

„RESET" (only gas units)
In case of a mulfunction in the burner system „RESET GAS" or "rES" (depends on the model)
is indicated. After 15 seconds additionally an acoustic signal is coming up. By pressing indication „RESET GAS" automatically a new ignition sequence is started. If after 15 seconds the indication „RESET GAS"-is not coming up again, then the flame is burning and the unit is ready for use.
If the indication is still coming up even after starting the sequence several times, then the after service has to be informed!

Table of content

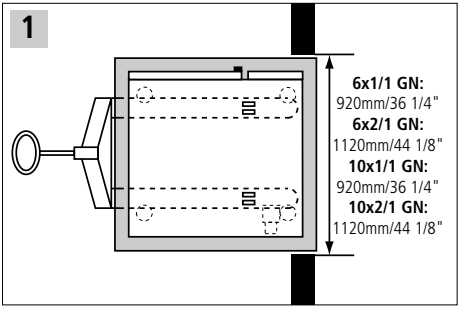
Attention:
The named standards are valid for Germany. In all other countries follow the local standards and valid instructions. Damages based on installation not complying with the directives given hereunder are not covered by warranty terms.

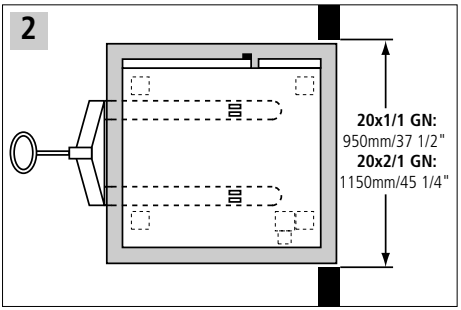
Check for any transport damage.
Should there be any signs of transport damage, inform your dealer/freight forwarder immediately! Remove all cartons, packing materials, documents, etc. from the interior cabinet.

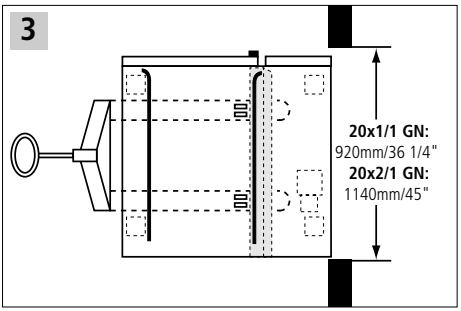
List of contents

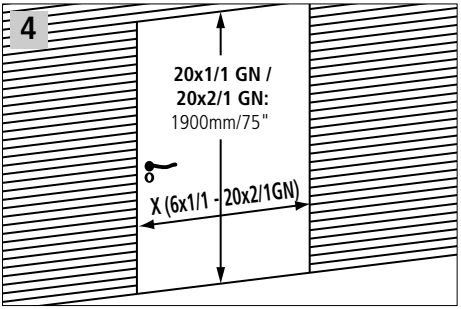
Safety instructions	3
Transport of units	5
Minimum clearance	6
Installation table units	7
Installation floor units	8
Leveling mobile oven racks	9
Electrical connection	10 - 11
Water connection / Water filter selection	12 - 13
Gas connection / Gas consumption	14 - 16
Drain connection	17
Ventilation, technical data, heat emission	18
Options	19 - 21
Connection datas	22
Conversion tables	23
Schematic drawing	24 - 35

Transport of units









Transport of units

Transport of units using a pallet pic. 1,2

Transport of units without a pallet, 20x1/1 GN and 20x2/1 GN units only. Put a piece of wood between pallet jack and left guide rail of the trolley pic. 3

Remove all containers/mobile oven racks from the cabinet. For floor model, remove corner mountings from the pallet. Take unit off the pallet.

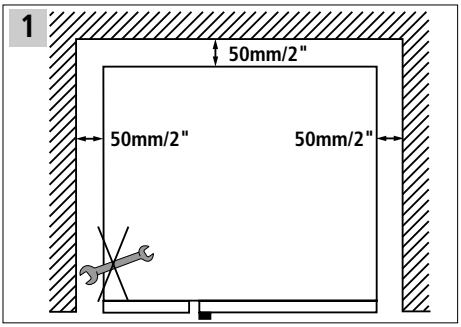
Observe the weight of the units:
see page 18

Observe door height pic. 4

X= Required door width when transporting units without pallet:

6x1/1GN	840 mm (33 1/8”)
6x2/1GN	1040 mm (41”)
10x1/1GN	840 mm (33 1/8”)
10x2/1GN	1040 mm (41”)
20x1/1GN	920 mm (36,1/4”)
20x2/1GN	1140 mm (45”)

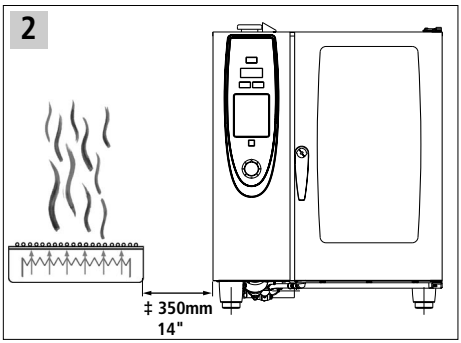
Recommended minimum clearance



Minimum clearance left/ right/ rear 50 mm (2”) (except floor models). pic. 1

On floor models (20x1/1 GN and 20x2/1 GN) there must be a minimum clearance of 500 mm (approx 20”) on the left side of the unit, for installing the power cable

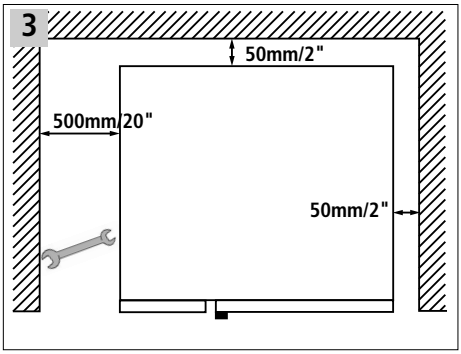
Minimum clearance when there are heat sources on the left-hand side is 350 mm (14”). pic 2



Attention: A safety shut down can occur if the ambient temperature on the left hand side of the unit is too high.

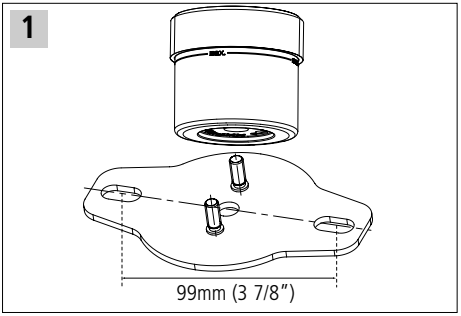
Option:
Heat shield see page 19

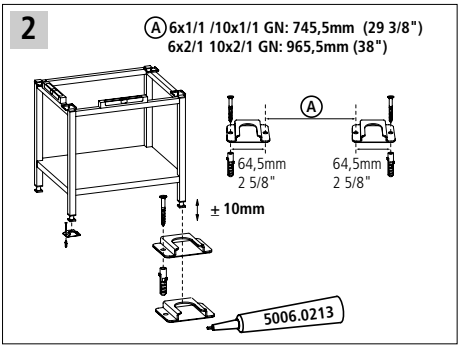
We recommend a distance of 500 mm (20”) on the left hand side of the unit for carrying out maintenance work. pic. 3

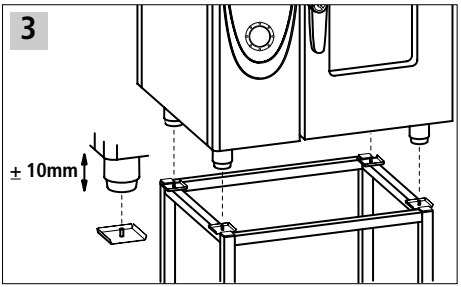


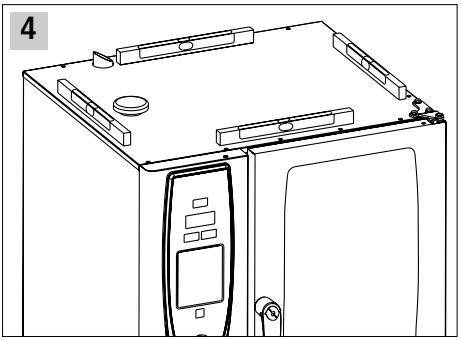
Warning:
The units must only be installed in frost-free rooms.

Installation type 6x1/1, 6x2/1, 10x1/1, 10x2/1 GN









If Gas units are installed on a table or on the kitchen floor (combi duo) then:

a) the fixing plate (part number: 12.00.256) must be fitted to the units leg

b) the plate must be fitted to the surface using either screws and dowels or studs and nuts or the special adhesive. pic. 1

Attention: The center height of the drain pipe is 63 mm (2 1/2"). When installing combi duo obserev the drain height of the bottom unit.

Option:
Using 150 mm (5 7/8") legs and height adjustable transport trolley for extended space underneath unit.
See page 19

Stands for gas appliances must be fixed to the floor using the fixing set supplied with the unit either with screws and dowels, or with the special adhesive supplied. pic. 2

Electrical appliances: Fixing set is not included in the scope of supply, but may be ordered under part no.: 8700.0317. pic. 2

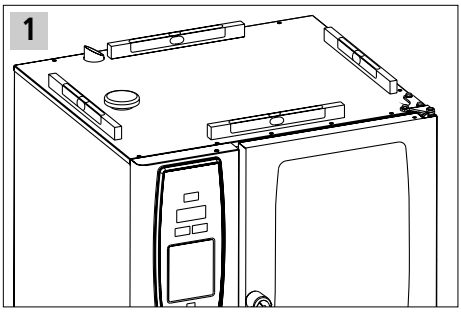
Slide the stand into the fixing brackets and level it.

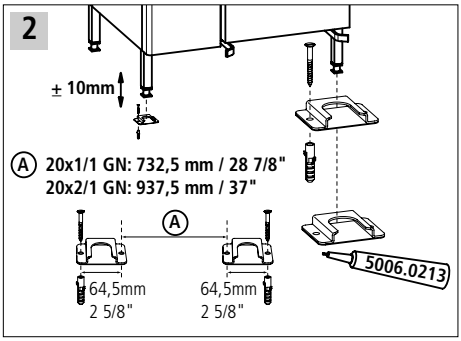
Place the unit on the stand. The feet of the unit must be secured by means of the locating pins of the stand pic. 3

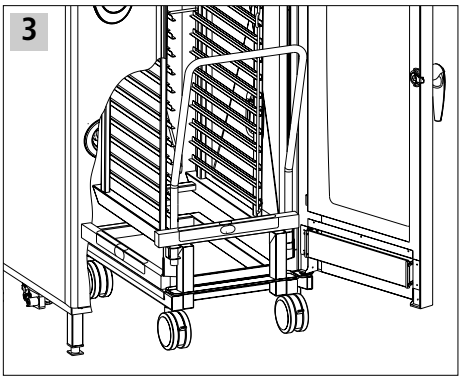
Ensure that the unit is level pic. 4

Attention: When Installing a Combi Duo observe the height of the drain pipe

Installation Typ 20x1/1 GN, 20x2/1 GN







Installation type 20x1/1 GN, 20x2/1 GN
Ensure that the unit is level pic. 1

Fix the floor locks, (supplied with the fixing set) to the floor with either screws and pins or with the special adhesive. pic. 2

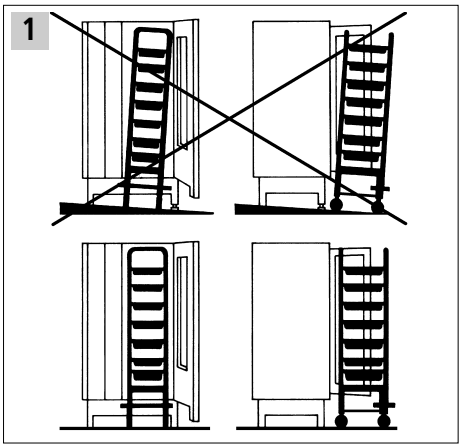
Next slide the unit into the floor locks pic. 2

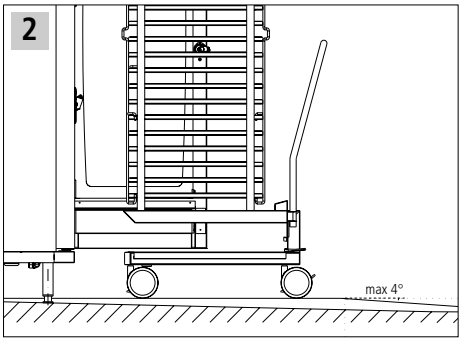
The mobile oven rack must be level when standing inside the unit pic. 3

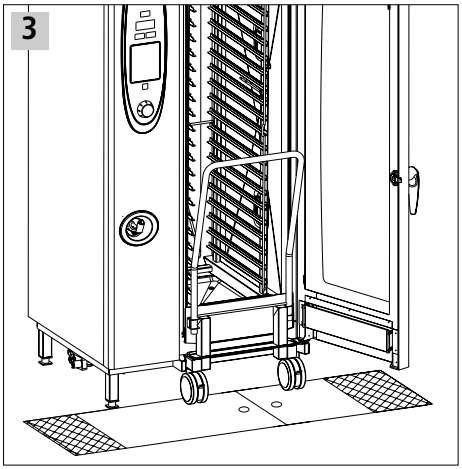
Attention: Observe height of the drain pipe

Option:
Using leg extension for more space underneath unit.
Install height extension for mobile oven rack see page 20

Leveling mobile oven racks 20x1/1 and 20x2/1 GN





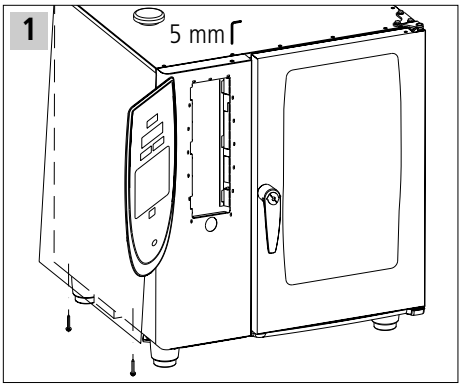


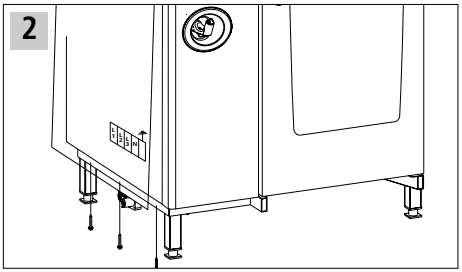
If the floor is not level, an access ramp (not supplied) will be required. The incline must not exceed 4°. pic. 1,2

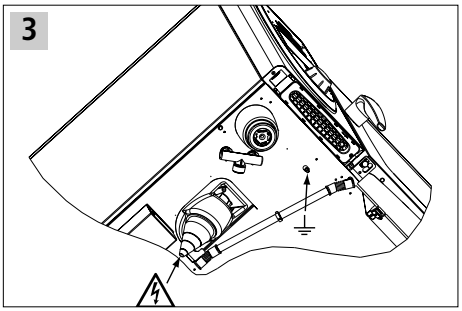
Option:
Access ramp see page 20

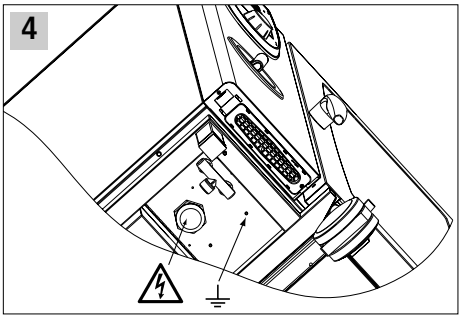
If there is a drain grill in front of the floor unit, a ramp should be placed over it to enable the mobile oven rack to be used. pic. 3

Electrical connection









Attention:
Observe local regulations and standards during installation
Common information see next page

Electrical units

- Each appliance requires an independent fused power supply line
- A permanent electrical connection must be provided for the units.
- Table units (6X1/1 GN - 10X2/1 GN) are equipped with a power cable, which is directly connected to the main contactor. The cable comes without plug and is approx. 2,5 m (8 ft) long.
- Floor units 20X1/1 GN and 20X2/1 GN are delivered without power cable
- The main contactor (table units) and the main terminals (floor models) are located in the electrical compartment and are accessible after removing the left side panel. pic. 1/2

Gas units

- We recommend an independent fused power supply line.
- All units are equipped with a power cable without plug, approx.2,5 m (8 ft) long.
- The main terminals are located in the electrical compartment and are accessible after removing the left side panel. pic. 1/2
- Unit should be connected to a fused spur, observe local electrical reculations
- **Attention!**
  Observe polarity of the mains!
  No burner function with wrong polarity!
- Colour coding of the power cable:
  yellow/green = earth, blue = Neutral
  brown or black = Phase L1 (L2)

Gas and electrical units

- The stud for the earth bonding is located on the bottom side, underneath the control panel. Connect the wire for the earth bonding to this stud. pic. 3/4

Electrical connection

Common information

- Follow the installation instructions and the information on the rating plate when connecting the unit.
- Comply with all local regulations and standards!
- We recommend an independent fused power supply line for each appliance.
- We recommend the use of an earth leakage circuit breaker (30mA).
- On-site installation: provide accessible all-pole disconnection device with a minimum of a 3 mm contact gap.
- The wiring diagram can be found in a bag on the inner side of the left side panel.
- Special voltages available on request.
- The cross-section of the power cables must be based on the current consumption and on local regulations.
- Applicable standards: EN 60335, IEC 335
- For electrical connection data, see page 22:
- Before disconnecting or reconnecting unit. Ensure electrical supply is isolated.

For appliance connections, precise dimensions and connection points, see pages 24 and following.

Power cable :

- The exchange of the power cable may only be carried out by the manufacturer, his service agents or similar qualified personal

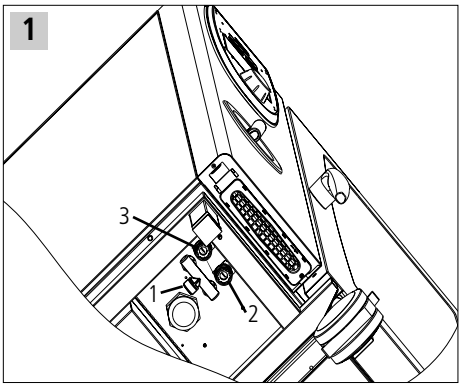
Electrical units

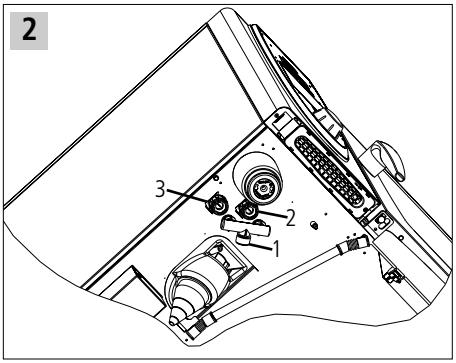
- Connect an H07RN-F supply cable (minimum), tighten the cable gland and the strain relief
- Connect the supply as follows:
  Grey terminal:
  L1, L2, L3 (non-phase-sequence-dependent)
  Blue terminal: Neutral (only 3N AC)
  Yellow/green terminal: Earth connection

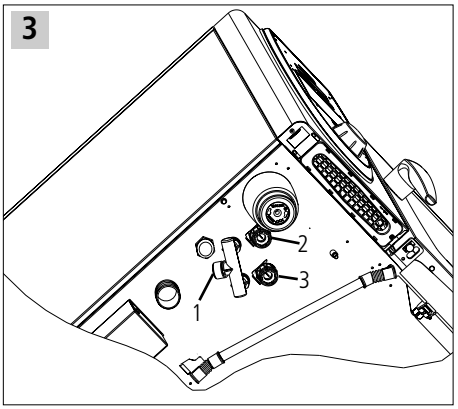
Gas:

- Units the power cable has to be exchanged a power cable with the following minimum quality has to be used:
  H05 RN-F 3x2,5 mm2
- If the gas unit (20x1/1 / 20x2/1 GN) is protected by means of a safety cut-out it must observe that this cut-out is at least of characteristic "C".

Water connection / Selection of water filter







Legend to water connections:

1 = Common water supply 3/4"
cold water 30°C/86°F

In case of split water connection

2 = Cold water, 30°C/86°F, connection 3/4"
(quenching)

3 = Treated water connection 3/4"
(steam generator, moistening, hand shower, max 60°C/140°F)

Floor models	pic. 1
Table models electric	pic. 2
Table models gas	pic. 3

- Install individual shut-off valve for each appliance
- Rinse the water supply lineprior to connection to the unit!
- Connected water pressure must be in the range 150 kPa - 600 kPa,recommended 300 kPa

pic.4

Average total water consumption is as follows (values excluding usage of hand shower)
Unit size:

6x1/1	6x2/1	10x1/1	10x2/1	20x1/1	20x2/1
12,0 l/h	32 l/h	25,2 l/h	41,4 l/h	49,8 l/h	60,0 l/h

Note: The manufacturer recommends a preventive check of your equipment 6 months after installation to determine actual scvale build up. This should be done by a trained technician.

Water treatment:
For filter selection see next page

In most cases it is not necessary to install a filter or water treatment for water supply. The integrated SC-automatic changes the water in the steam gen-erator at regular intervals automatically. However under certain water conditions different filter applications (A, B, C, D below) might improve equipment performance

Selection of water filter

Please consult your local water supply board for advise on chlorine (Cl2), chlorid (Cl-) and hardness of the water

A) Particle filter pic. 4/5

When the water contains sand, iron particles or suspended matter, we recommend a 5-15 µm (micro meter) particle filter:

B) Active carbon filter pic. 4/5

When the level of chlorine (Cl2) in the water exceeds 0.2 mg/l (= ppm) (information available from the water company), an active carbon filter should be installed.

C) Complete De-Ionization pic. 4/5

When the water has a chloride Cl- concentration above 150 mg/l (= 150 ppm), a complete deionization system should be installed to avoid corrosion.

Note: Make sure a remaining conductivity of 50 µS/cm (micro Siemens) remains in the water.

D) Water softener: pic. 4/5

A water softener is recommended when a high level of scale (not containing chloride) is experienced. Systems recommended: H+ Ion Exchanger or Kleensteam. Sodium ion exchangers (as used in dishwashers) must not be used.

Amongst others the following filter manufacturers offer adequate filter applications:
Britta, Cuno, Everpure.

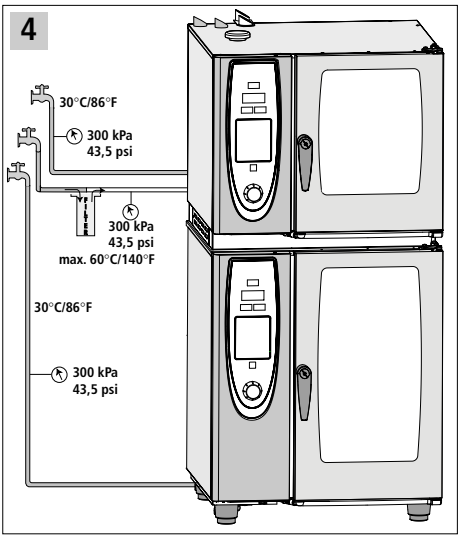
Important for treated water connection:
Split the water supply to standard and treated water connection for each unit to exteno filter capacity!
Remove T-connection at water inlet pic. 1/2/3
Connect cold untreated water to inlet position "2"
Connect treated water to inlet position "3"

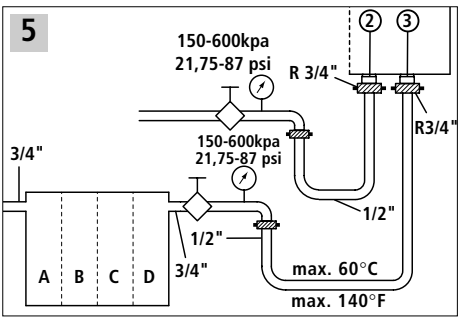
Filter capacity:
Average treated water consumption is as follows (values excluding usage of hand shower)

6x1/1	6x2/1	10x1/1	10x2/1	20x1/1	20x2/1
3,0 l/h	8 l/h	6,3 l/h	10,4 l/h	12,5 l/h	15,0 l/h

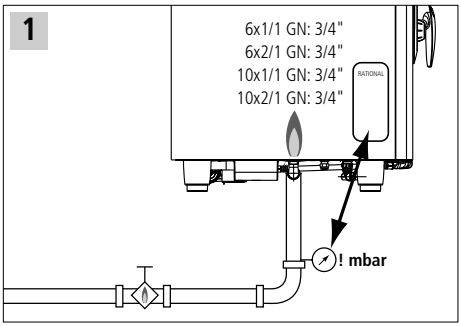
Important for filter connection:
Water supply hose / pipe size 1/2" minimum
Connection to filter : 3/4"

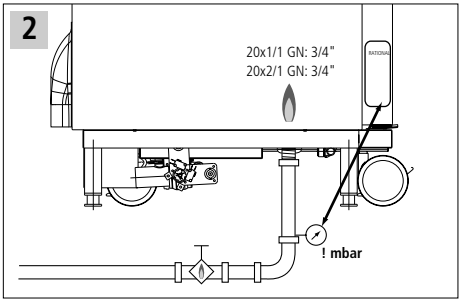
Should a combination of filter be installed the sequence A-B-C-D should be observed in flow direction as shown in pic. 4 below.

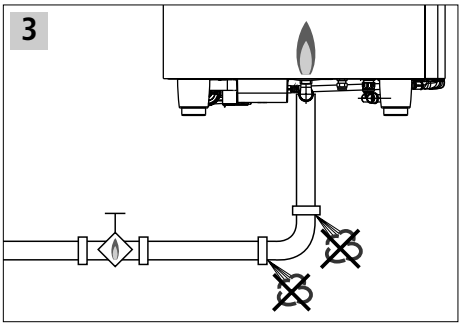


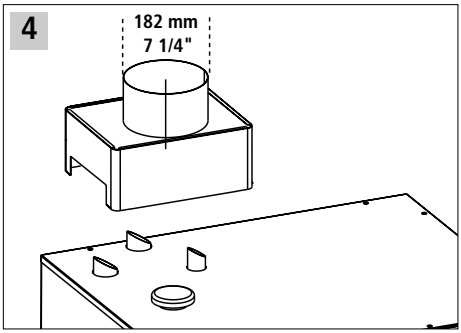


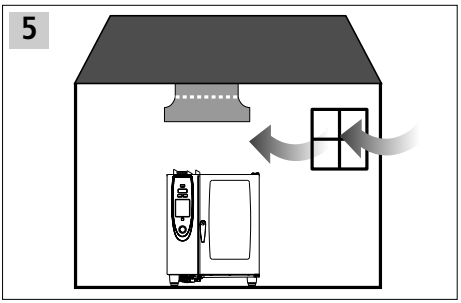
Gas connection

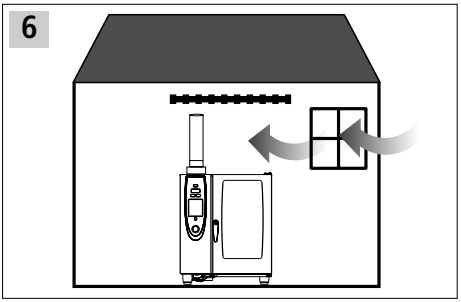


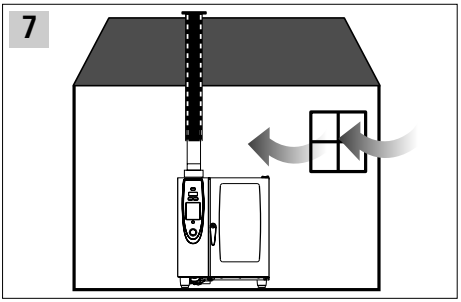












Gas connection

Important!
To ensure that the burner settings made at the factory conform with the actual installation conditions, the waste gas (C0, C02) from the steam and hot-air burners must be analysed during commissioning. The corresponding values must be documented inside the unit. If the undiluted C0 values are above 1000 ppm, the burner settings must be checked and if necessary adjusted by engineers trained and certified by the company.

Comply with local gas authority regulations!
Follow installation instructions!

- Check that the gas type supplied is suitable for the unit.
- The diameter of the pipe must comply with local regulations
- External thread of gas connection: pic. 1,2
- Gas stop valve supplied for each unit.
- Gas connection with gas outlet socket is possible.
- All gas supply connectors must comply with local regulations.
- The unit must be secured against movement.
- Check the gas supply line for leakage. pic. 3

Attention:

- The unit is only to be connected to the gas supply by a locally approved gas installer. It is vital to ensue that the gas connection pipes as well as the connection pipes for the associated gas metering systems match the stipulated pipe widths.
- If the flow pressure deviates from the specified flow pressure (see table), inform the gas authorities. If the flow pressure of natural gas exceeds 30 mbar
  (12,04 in w. c.), the unit must not be switched on and the gas supply must be disconnected.
- Attention: The gas parts are designed for a maximum flow pressure of 65 mbar (26,09 in w. c.)

Type B13, B23 gas unit

B13 Ambient-air-dependent gas-powered cooking range **with** fan assisted burners with exhaust collector. **Valid for all units.**

B23 Ambient-air-dependent gas-powered cooking range with fan assisted burners **without** exhaust collector. Total nominal heat load >14 KW **(all except 6x1/1 GN).**

- Automatic direct ignition with ignition monitor.

Installation of draft diverter pic. 4
The draft diverter is not shipped with the unit, but can be ordered under the following part numbers:
Unit size:

6x1/1 GN	Art.-No.: 70.00.356
6x2/1 GN	Art.-No.: 70.00.359
10x1/1 GN	Art.-No.: 70.00.348
10x2/1 GN	Art.-No.: 70.00.349
20x1/1 GN	Art.-No.: 70.00.352
20x2/1 GN	Art.-No.: 70.00.343

Gas exhaust system

- Check that gas exhaust pipes are leakproof, in accordance with local regulations
- Waste gas pipes of aluminium or other materials which are not resistant to temperatures up to 200°C should not be used because of the high waste gas temperatures!

Gas exhaust system can be connected to the following:
(observe your local regulations)

1. Extractor hood pic. 5
2. Fan roof pic. 6
3. Directly into the flue pic. 7

Gas connection / Gas consumption

Room ventilation
The rooms in which these appliances are installed must be well ventilated, in order to prevent an unacceptable build-up of harmful combustion products.

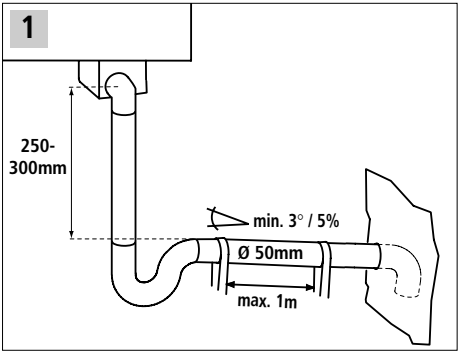
We recommend to service the gas units at least once a year in accordance with the specified standards.

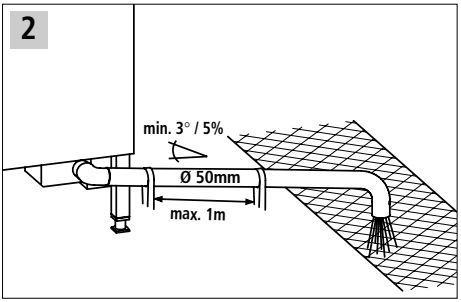
Gas consumption

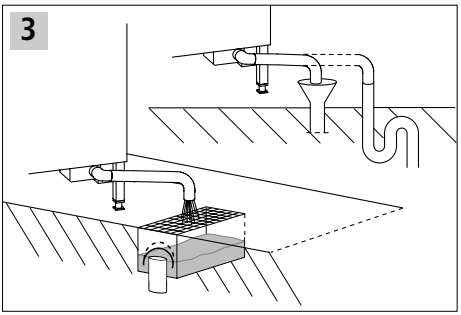
Gas type	Required flow-pressure	Wobbe index (15°C, 1013mbar) Wi	Ws	max. consumption on nominal heat load 6x1/1 GN	6x2/1 GN	10x1/1 GN
		MJ/m³	MJ/m³	11 kW	21,5 kW	21,5 kW
Nat. gas H G20	18-25 mbar	45,67	50,72	1,2 m³/h	2,3 m³/h	2,3 m³/h
Nat. gas L G25	20-30 mbar	37,38	41,52	1,4 m³/h	2,6 m³/h	2,6 m³/h
		MJ/m³	MJ/m³	12 kW	23 kW	23 kW
LPG G30	25-57,5 mbar	80,58	87,33	1,01 kg/h	1,93 kg/h	1,93 kg/h
LPG G31	25-57,5 mbar	74,75	81,19	1,04 kg/h	2,03 kg/h	2,03 kg/h

Gas type	Required flow-pressure	Wobbe index (15°C, 1013mbar) Wi	Ws	max. consumption on nominal heat load 10x2/1 GN	20x1/1 GN	20x2/1 GN
		MJ/m³	MJ/m³	32 kW	43 kW	64 kW
Nat. gas H G20	18-25 mbar	45,67	50,72	3,4m³/h	4,6 m³/h	6,8 m³/h
Nat. gas L G25	20-30 mbar	37,38	41,52	3,9 m³/h	5,3 m³/h	7,9m³/h
		MJ/m³	MJ/m³	34 kW	46 kW	67 kW
LPG G30	25-57,5 mbar	80,58	87,33	2,86 kg/h	3,86 kg/h	5,63 kg/h
LPG G31	25-57,5 mbar	74,75	81,19	3,01 kg/h	4,05 kg/h	6,03 kg/h

Drain connection







- The appliance complies with the relevant regulations (DVGW, SVGW, KIWA, WRC)
- **Pipe capable of withstanding steam temperature - no hoses**
- Welding of drain pipe to the units drain is not permissible (welding can cause damages to the unit)
- **DN 50 pipe** with constant gradient (min. 5% or 3°); do not reduce the diameter of the pipe.
- Fixed connection with odour lock permissible; a ventilated drain line is integral to the appliance pic. 1,2
- Where there is an existing floor drain without air trap, a clear outflow of 2 cm (1") must be provided. pic. 3

Option:
For reduction of steam escape via the ventilation pipe a condensate collector or an additional ascending pipe can be used. See page 21

Note drainage dimensions: short-term pumped discharge volume of steam generator 0.7 l/sec (0,18 gal/sec.)
- Average waste water temperature: 65°C
- Applicable standard: DIN 1986, Part 1

Attention: The center height drain pipe of table models is 63 mm (2 1/2") and floor models is 70 mm (2 7/8").

Option table models:
Using 100 mm (4") legs for extended space underneath unit.
Height adjustable transport trolley, see page 19

Option floor models:
Using leg extension for more space underneath unit.
Install height extension for mobile oven rack see page 20

Ventilation, technical data, heat emission

Ventilation:

An exhaust hood is not essential. If one is fitted, bear the following points in mind:

- Comply with all local regulations and standards;
- The hood should project 300-500 mm (1-1,6 ft) in front of the appliance;
- Install a grease filter in the projecting part of the hood;
- An exhaust hood is available as an option for 6x1/1 - 20x1/1 GN units.
- For installation of the hood, please follow the instruction of the corresponding installation manual

Technical data:

Noise emission level: <70dBA Hoseproofness: IPX5

Heat emission:

Electrical units:	**6x1/1 GN**	**6x2/1GN**	**10x1/1 GN**	**10x2/1 GN**	**20x1/1 GN**	**20x2/1 GN**
latent:	2.143 kJ/h	4.167 kJ/h	3.529 kJ/h	6.667 kJ/h	7.200 kJ/h	12.500 kJ/h
sensible:	2.727 kJ/h	5.000 kJ/h	4.615 kJ/h	9.474 kJ/h	9.000 kJ/h	14.286 kJ/h

Gas units:	**6x1/1 GN**	**6x2/1GN**	**10x1/1 GN**	**10x2/1 GN**	**20x1/1 GN**	**20x2/1 GN**
latent:	2.143 kJ/h	4.167 kJ/h	3.529 kJ/h	6.667 kJ/h	7.200 kJ/h	11.583 kJ/H
sensible:	2.571 kJ/h	5.000 kJ/h	4.286 kJ/h	9.231 kJ/h	8.780 kJ/h	13.636 kJ/H

Weight of electric units:

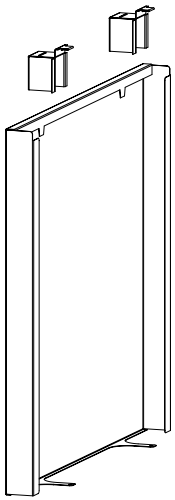
Units with "touch screen":		Units without "touch screen"	
6 x 1/1 GN: 110,0 kg	6 x 2/1 GN: 142,5 kg	6 x 1/1 GN: 99,0 kg	6 x 2/1 GN: 133,0 kg
10 x 1/1 GN: 135,5 kg	10 x 2/1 GN: 182,0 kg	10 x 1/1 GN: 124,5 kg	10 x 2/1 GN: 175,5 kg
20 x 1/1 GN: 258,0 kg	20 x 2/1 GN: 332,0 kg	20 x 1/1 GN: 251,5 kg	20 x 2/1 GN: 326,0 kg

Weight of gas units:

Units with "touch screen":		Units without "touch screen"	
6 x 1/1 GN: 126,0 kg	6 x 2/1 GN: 168,0 kg	6 x 1/1 GN: 121,0 kg	6 x 2/1 GN: 158,5 kg
10 x 1/1 GN: 154,5 kg	10 x 2/1 GN: 198,0 kg	10 x 1/1 GN: 148,0 kg	10 x 2/1 GN: 189,5 kg
20 x 1/1 GN: 286,0 kg	20 x 2/1 GN: 370,5 kg	20 x 1/1 GN: 261,0 kg	20 x 2/1 GN: 369,5 kg

Right of technical modifications reserved.

1



Heat shield

Unit size:

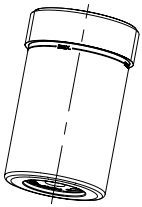
6x1/1GN	Art.-No.: 60.70.390
10x1/1GN	Art.-No.: 60.70.391
6x2/1GN	Art.-No.: 60.70.392
10x2/1GN	Art.-No.: 60.70.393
20x1/1GN	Art.-No.: 60.70.394
20x2/1GN	Art.-No.: 60.70.395

If minimum reuired the distance can not be maintained on the left sde of the unit a heat shield will help to reduce the heat stress to the unit

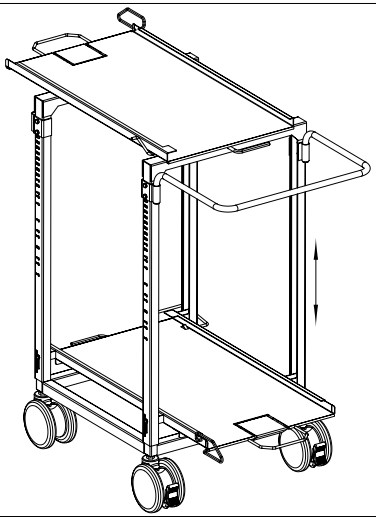
pic 1

The heat shield must be fitted to the left side panel of the unit.

2



3



Height extension of table units.

(6x1/1 GN up to 10x2/1GN)
Should the distance between floor and bottom of table units be too low (e.g. when installing combi duo), then the standard lower parts of the legs can be replaced by longer legs.
Art.-No.: 12.00.224 pic. 2
Attention: In this case the height of the upper rail in the cooking cabinet exceeds 1600 mm (63”)

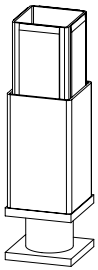
When using mobile oven racks and transport trollies the height difference can be compensated by a higt adjustable transport trolley. pic. 3

Height adjustable trolley:
Unit size:

6x1/1 and 10x1/1 GN	Art.-No.: 60.60.188
6x2/1 and 10x2/1 GN	Art.-No.: 60.70.160

Option

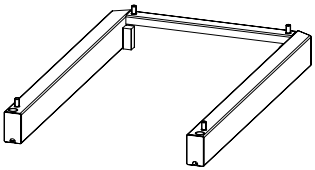
1



Foot extension for floor units

Art.-No.: 60.21.179
Should the the distance be too low between floor and bottom of floor units , foot extensions for floor units can be used pic 1
Attention: In this case the height of the upper rail exceeds 1600 mm (63”).

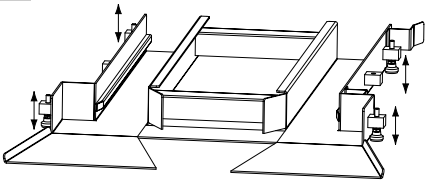
2



When using these foot extensions a height compensation of the mobile oven rack must be carried out by adding an additional frame. pic. 2

20x1/1GN	Art.-No.: 60.21.184
20x2/1GN	Art.-No.: 60.22.184

3

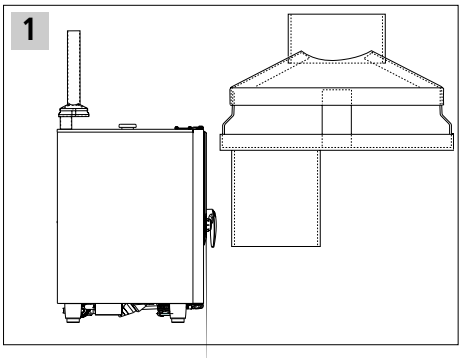


Ramp for mobile oven rack floor models

20x1/1GN	Art.-No.: 60.21.080
20x2/1GN	Art.-No.: 60.22.181

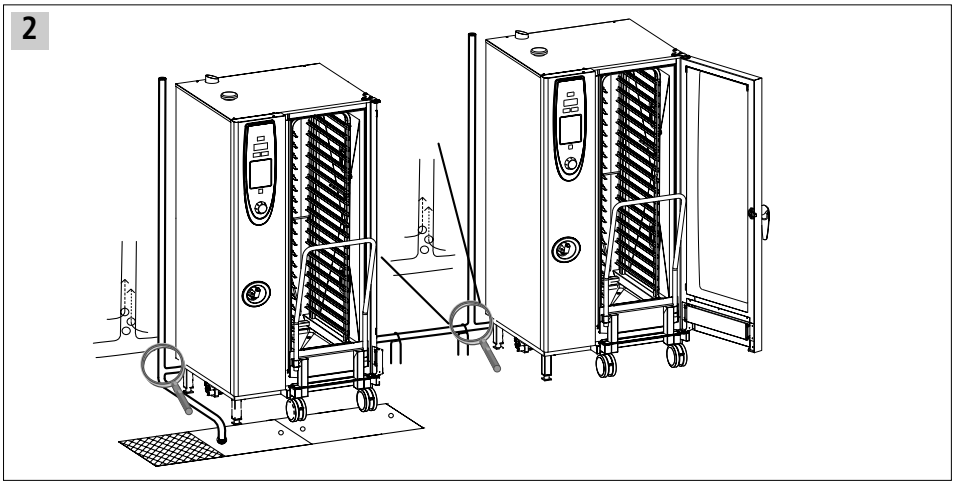
If the floor underneath the unit is not level the mobile oven rack ramp can level out this uneveness. The adjustment range of the legs is between +/- 10 mm . pic. 1

Option



Under critical installation condition (i. e. Installation in front cooking areas) the steam escape via the vent pipe can be elimnated by installing a condensation collector (8710.1309) pic. 1

Also for reducing the steam escape at the drain pipe an additional vent pipe can be fitted to the drain pipe. In this extra vent pipe holes must be drilled where air is sucked in and condensates the steam pic 2



Interfaces

a) A serial interface (RS232) is not standard, but can be retrofitted into all units.
Unit size
6x1/1GN - 10x2/1GN Art.-No.: 87.00.006
20x1/1GN - 20x2/1GN Art.-No.: 87.00.007

b) Units with touch screen are equipped with USB interface as a standard.

Connection datas

	P = kW						I = A					
	6x1/1	6x2/1	10x1/1	10x2/1	20x1/1	20x2/1	6x1/1	6x2/1	10x1/1	10x2/1	20x1/1	20x2/1
2 AC 208V		-	-	-	-				-	-	-	-
2 AC 240V		-	-	-	-				-	-	-	-
3 AC 200V	10,1	19,5	17,5	34,5	34,5	57,5	24	53,5	48	100	100	166
3 AC 208V	10	21	19	37	37,5	62	28	58,5	53	102,5	104	172
3 AC 230V	10	21	19	37k	37	62	25	53	48	93	93	156
3 AC 240V	10	21	19	37	37,5	62	24	51	46	89	90,5	149,5
3 NAC 400V	10	21	19	37	37	62	14,5	30,5	27,5	53,5	53,5	89,5
3 AC 400V	10	21	19	37	37	62	14,5	30,5	27,5	53,5	53,5	89,5
3 NAC 415V	10,5	22,5	20,5	40,5	40,5	66,5	14,5	31,5	28,5	56,5	56,5	92,5
3 AC 440V	10	21	19	37	37	62	13	28	25	49	49	81,5
3 AC 480V	10	21	19	37	37	62	12	25,5	23	44,5	44,5	75

	I = A						Ø mm2					
	6x1/1	6x2/1	10x1/1	10x2/1	20x1/1	20x2/1	6x1/1	6x2/1	10x1/1	10x2/1	20x1/1	20x2/1
2 AC 208V		-	-	-	-			-	-	-	-	
2 AC 240V		-		-	-	-		-	-	-	-	
3 AC 200V	35	63	63	100	100	200	4	10	10	25	35	95
3 AC 208V	30	60	60	110	110	175	4	10	10	25	35	95
3 AC 230V	32	63	63	100	100	200	4	10	10	16	25	50
3 AC 240V	30	60	60	110	110	175	4	6	6	16	25	50
3 NAC 400V	16	32	32	63	63	100	2,5	4	4	6	10	25
3 AC 400V	16	32	32	63	63	100	2,5	4	4	6	10	25
3 NAC 415V	16	32	32	63	63	100	2,5	4	4	6	10	25
3 AC 440V	16	32	32	63	63	100	2,5	4	4	6	10	25
3 AC 480V	15	30	25	50	50	80	2,5	4	4	6	6	16

	P = kW						I = A					
	6x1/1	6x2/1	10x1/1	10x2/1	20x1/1	20x2/1	6x1/1	6x2/1	10x1/1	10x2/1	20x1/1	20x2/1
1NAC 100V	0,3	0,35-	0,35	0,45	0,7	1	3	3,5-	3,5	4,5	7	10
1NAC 110V	0,3	0,35	0,35	0,45	0,7	1	2,7	3,2	3,2	4,1	6,4	9,1
1NAC 120	0,3	0,35	0,35	0,45	0,7	1	2,5	2,9	2,9	3,7	5,8	8,3
1NAC 127V	0,3	0,35	0,35	0,45	0,7	1	2,4	2,8	2,8	3,5	5,5	7,8
1NAC 220V	0,3	0,35	0,35,	0,45	0,7	1	1,4	1,6	1,6	2,1	3,6	4,5
1NAC 230V	0,3	0,35	0,35	0,45	0,7	1	1,3	1,5	1,5	2,0	3,5	4,4
1NAC 240V	0,3	0,35	0,35	0,45	0,7	1	1,2	1,4	1,4	1,9	3,3	4,2
2 AC 200V	0,3	0,35	0,35	0,45	0,7	1	1,5	1,8	1,8	2,3	4,0	5,0
2 AC 208V	0,3	0,35	0,35	0,45	0,7	1	1,4	1,7	1,7	2,2	3,8	4,8

Conversion tables

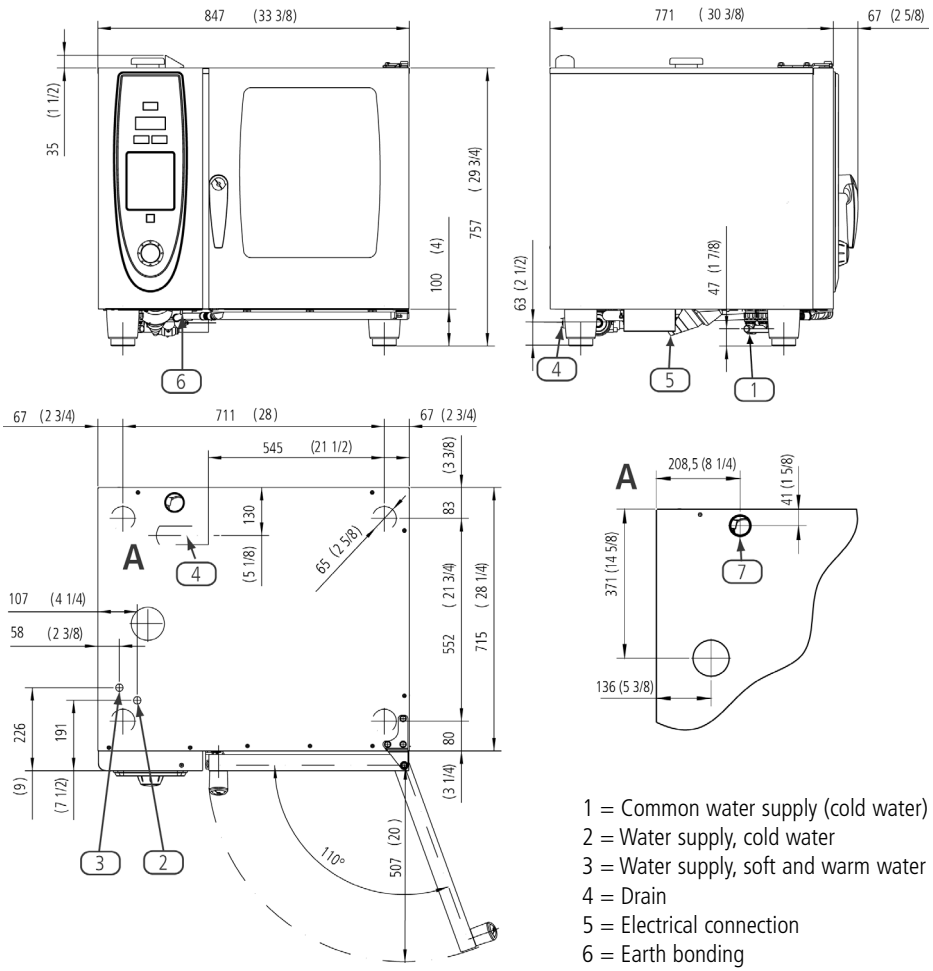
	°dH	°f	°e	ppm	mmol/l	gr/gal(US)	mval/kg
1 °dH	1	1,79	1,25	17,9	0,1783	1,044	0,357
1 °f	0,56	1	0,70	10,0	0,1	0,584	0,2
1 °e	0,8	1,43	1	14,32	0,14	0,84	0,286
1 ppm	0,056	0,1	0,07	1	0,01	0,0584	0,02
1 mmol/l	5,6	0,001	0,0007	100	1	0,00058	2
1 gr/gal (US)	0,96	1,71	1,20	17,1	0,171	1	0,342
1 mval/kg	2,8	5,0	3,5	50	0,5	2,922	1

1 °dH:	10,00 mg CaO/kg	**1 ppm :**	0,56 mg CaO/kg	**1 gr/gal :**	9,60 mg CaO/kg
(Germany)	17,86 mg $CaCO_3$/kg	(USA)	1,0 mg $CaCO_3$/kg	(USA)	64,8 mg $CaCO_3$/gal
	7,14 mg Ca^{2+}/kg		0,40 mg Ca^{2+}/kg		17,11 mg $CaCO_3$/kg
1 °f :	5,60 mg CaO/kg	**1 mmol/l :**	56,00 mg CaO/kg		6,85 mg Ca^{2+}/kg
(France)	10,0 mg $CaCO_3$/kg	(chem. conz.)	100,0 mg $CaCO_3$/kg		
	4,00 mg Ca^{2+}/kg		39,98 mg Ca^{2+}/kg		
1 °e :	8,01 mg CaO/kg	**1 mval/kg :**	28,00 mg CaO/kg		
(GB)	14,3 mg $CaCO_3$/kg	(Milliäquivalent)	50,0 mg $CaCO_3$/kg		
	5,72 mg Ca^{2+}/kg		19,99 mg Ca^{2+}/kg		

kPa	mbar	psi	inch/wc
0,1	1	0,0147	0,4014
0,2	2	0,0294	0,8028
0,3	3	0,0441	1,2042
0,4	4	0,0588	1,6056
0,5	5	0,0735	2,0070
0,6	6	0,0882	2,4084
0,7	7	0,1029	2,8098
0,8	8	0,1176	3,2112
0,9	9	0,1323	3,6126
1	10	0,147	4,0140
1,2	12	0,1764	4,8168
1,4	14	0,2058	5,6196
1,6	16	0,2352	6,4224
1,8	18	0,2646	7,2252
2	20	0,294	8,0280
2,5	25	0,3675	10,0350
3	30	0,441	12,0420
3,5	35	0,5145	14,0490

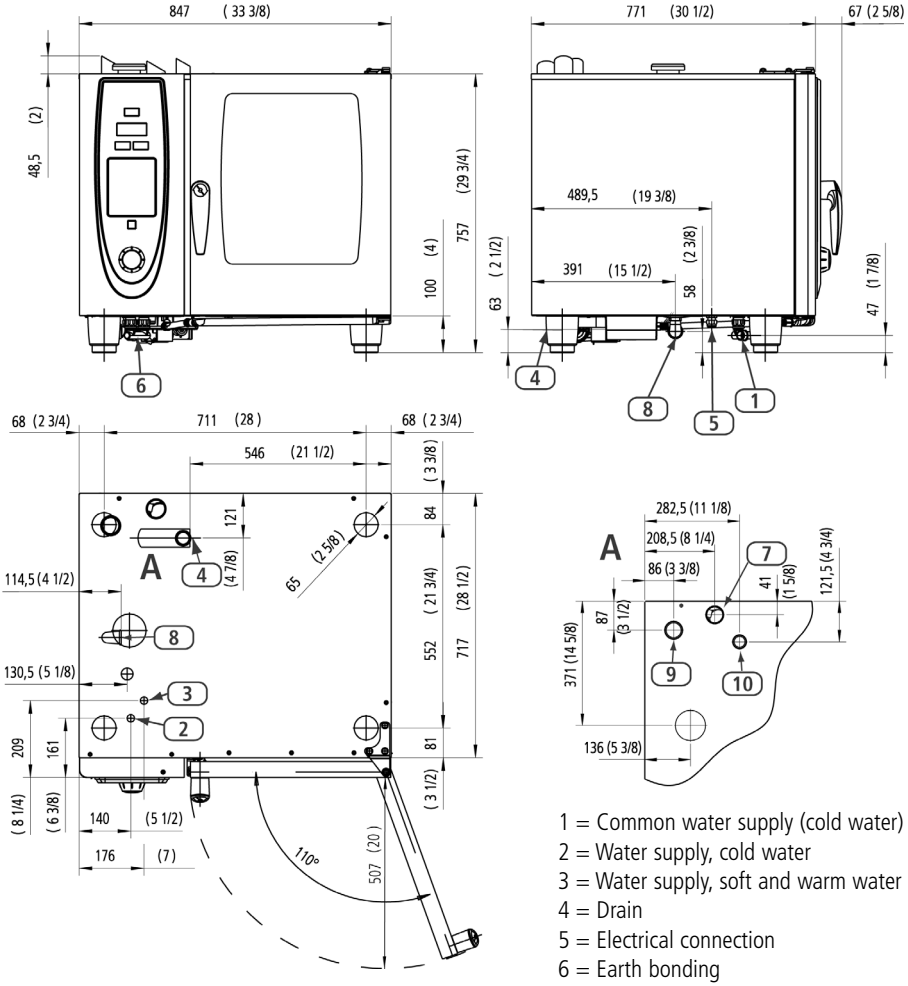
kPa	mbar	psi	inch/wc
4	40	0,588	16,0560
4,5	45	0,6615	18,0630
5	50	0,735	20,0700
5,5	55	0,8085	22,0770
6	60	0,882	24,0840
6,5	65	0,9555	26,0910
7	70	1,029	28,0980
7,5	75	1,1025	30,1050
8	80	1,176	32,1120
8,5	85	1,2495	34,1190
9	90	1,323	36,1260
9,5	95	1,3965	38,1330
10	100	1,47	40,1400
20	200	2,94	80,2800
30	300	4,41	120,4200
40	400	5,88	160,5600
50	500	7,35	200,7000
100	1000	14,7	401,4000

Schematic drawing 6x1/1 GN



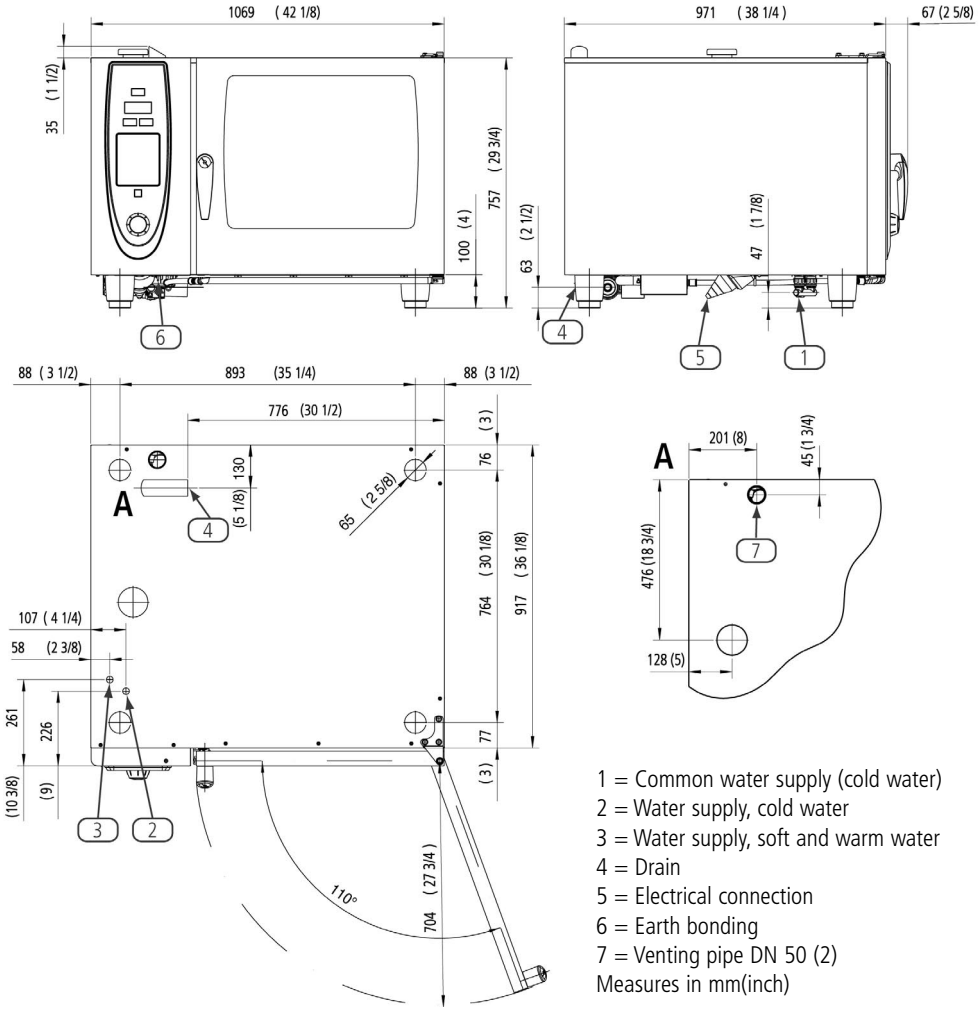
1 = Common water supply (cold water)
2 = Water supply, cold water
3 = Water supply, soft and warm water
4 = Drain
5 = Electrical connection
6 = Earth bonding
7 = Venting pipe DN 50 (2)
Measures in mm(inch)

Schematic drawing 6x1/1 GN Gas



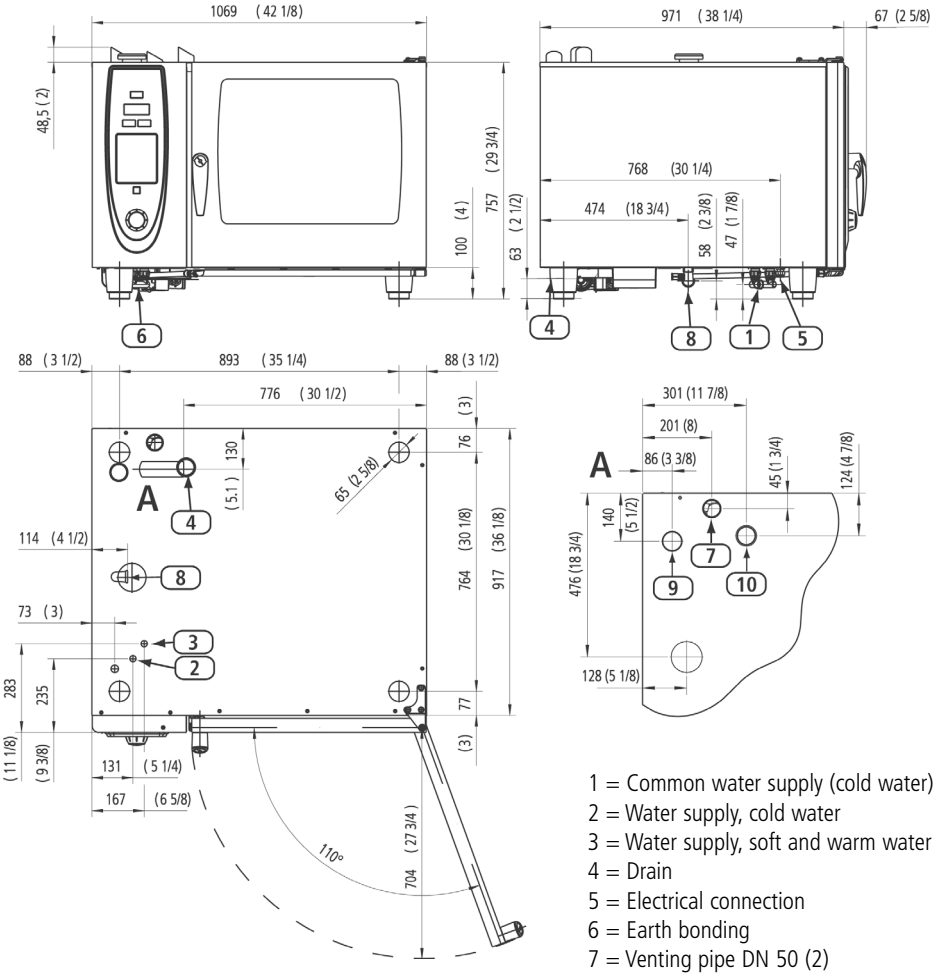
1 = Common water supply (cold water)
2 = Water supply, cold water
3 = Water supply, soft and warm water
4 = Drain
5 = Electrical connection
6 = Earth bonding
7 = Venting pipe DN 50 (2)
8 = Gas supply 3/4"
9 = Exhaust pipe steam
10 = Exhaust pipe hot air
Measures in mm(inch)

Schematic drawing 6x2/1 GN



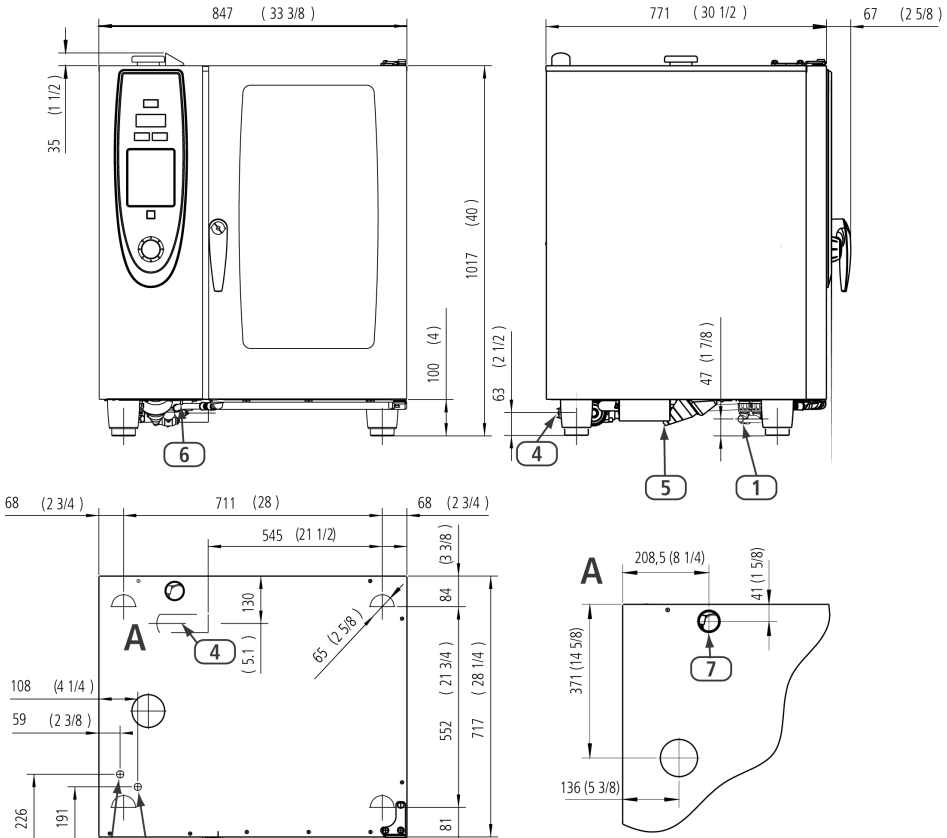
1 = Common water supply (cold water)
2 = Water supply, cold water
3 = Water supply, soft and warm water
4 = Drain
5 = Electrical connection
6 = Earth bonding
7 = Venting pipe DN 50 (2)
Measures in mm(inch)

Schematic drawing 6x2/1 GN Gas



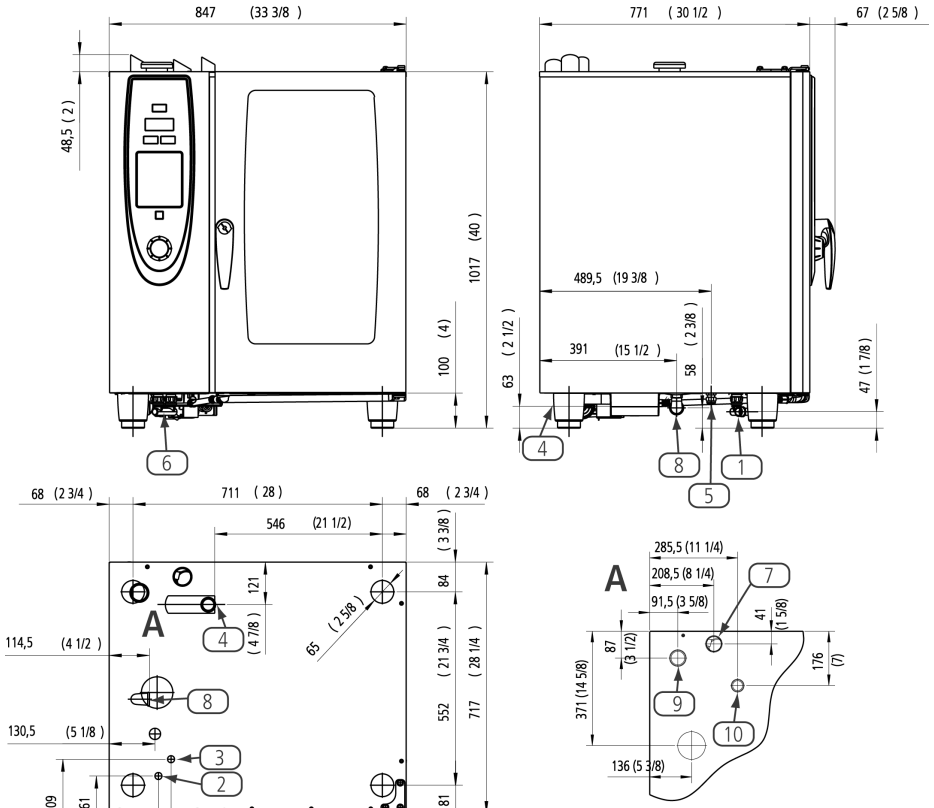
1 = Common water supply (cold water)
2 = Water supply, cold water
3 = Water supply, soft and warm water
4 = Drain
5 = Electrical connection
6 = Earth bonding
7 = Venting pipe DN 50 (2)
8 = Gas supply 3/4”
9 = Exhaust pipe steam
10 = Exhaust pipe hot air
Measures in mm(inch)

Schematic drawing 10x1/1 GN



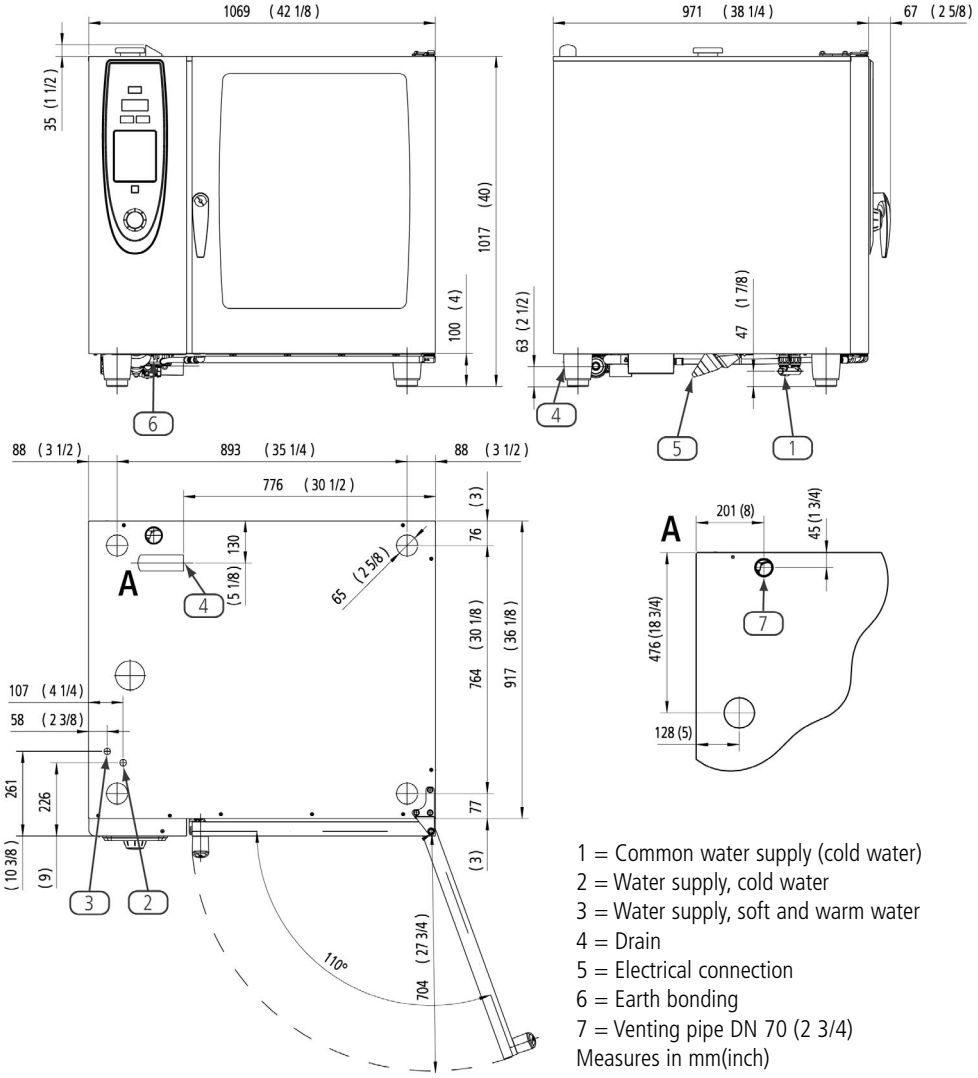
1 = Common water supply (cold water)
2 = Water supply, cold water
3 = Water supply, soft and warm water
4 = Drain
5 = Electrical connection
6 = Earth bonding
7 = Venting pipe DN 50 (2)
Measures in mm(inch)

Schematic drawing 10x1/1 GN Gas



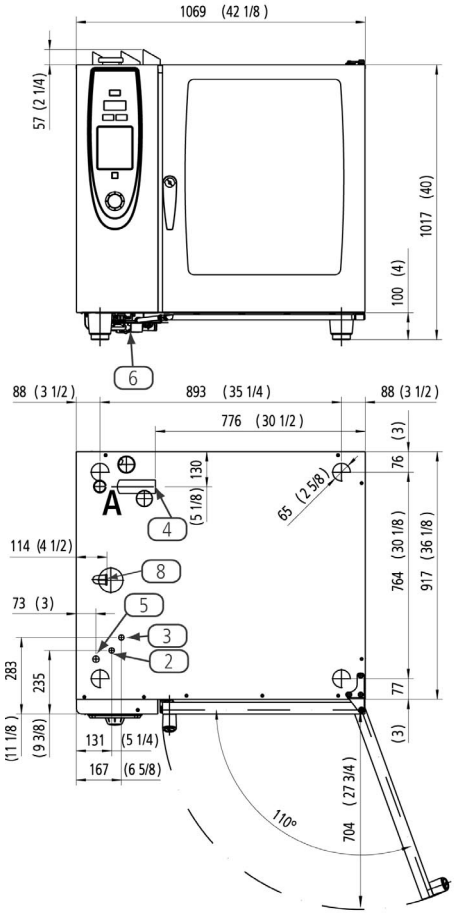
1 = Common water supply (cold water)
2 = Water supply, cold water
3 = Water supply, soft and warm water
4 = Drain
5 = Electrical connection
6 = Earth bonding
7 = Venting pipe DN 50 (2)
8 = Gas supply 3/4"
9 = Exhaust pipe steam
10 = Exhaust pipe hot air
Measures in mm(inch)

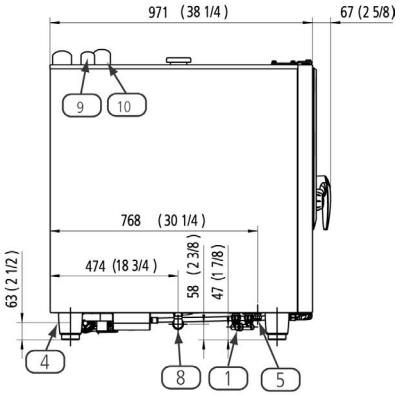
Schematic drawing 10x2/1 GN

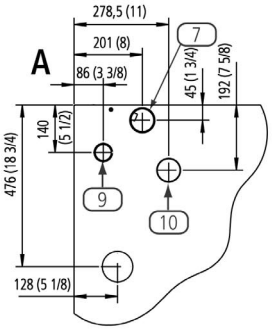


1 = Common water supply (cold water)
2 = Water supply, cold water
3 = Water supply, soft and warm water
4 = Drain
5 = Electrical connection
6 = Earth bonding
7 = Venting pipe DN 70 (2 3/4)
Measures in mm(inch)

Schematic drawing 10x2/1 GN Gas

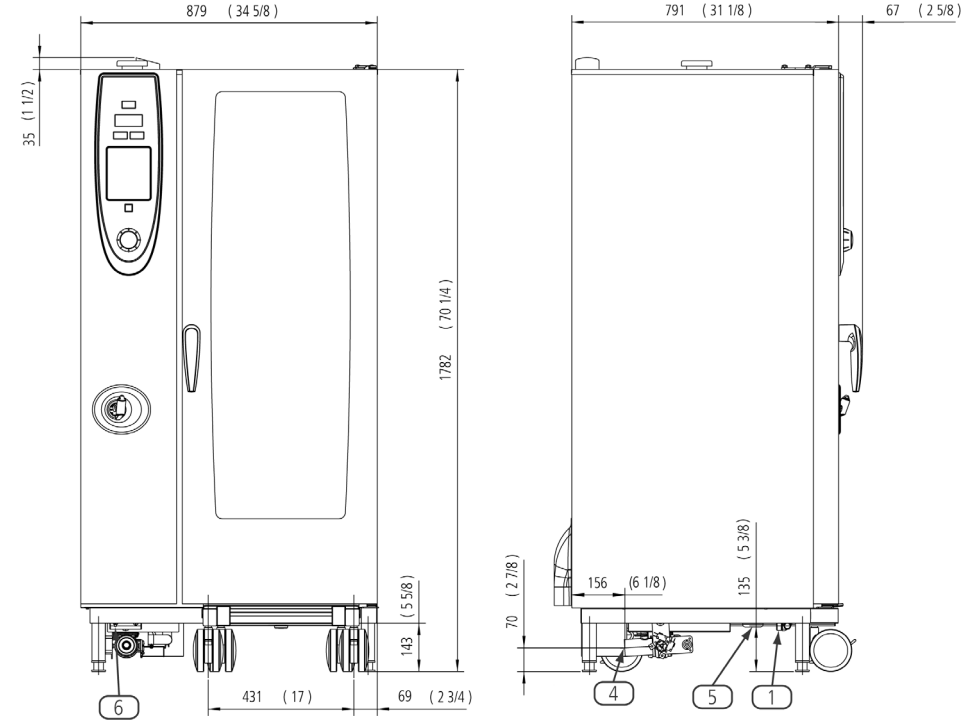


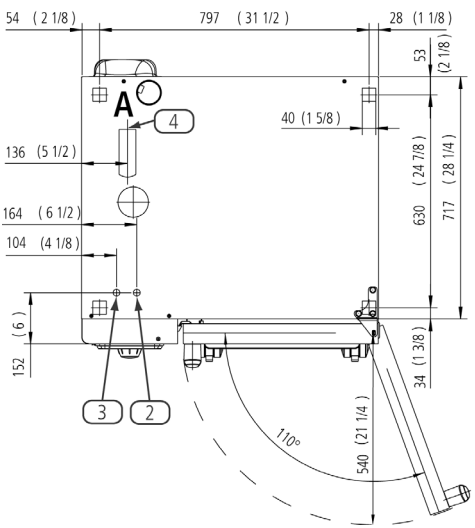


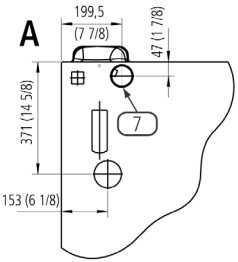


1 = Common water supply (cold water)
2 = Water supply, cold water
3 = Water supply, soft and warm water
4 = Drain
5 = Electrical connection
6 = Earth bonding
7 = Venting pipe DN 70 (2 3/4)
8 = Gas supply 3/4"
9 = Exhaust pipe steam
10 = Exhaust pipe hot air
Measures in mm(inch)

Schematic drawing 20x1/1 GN

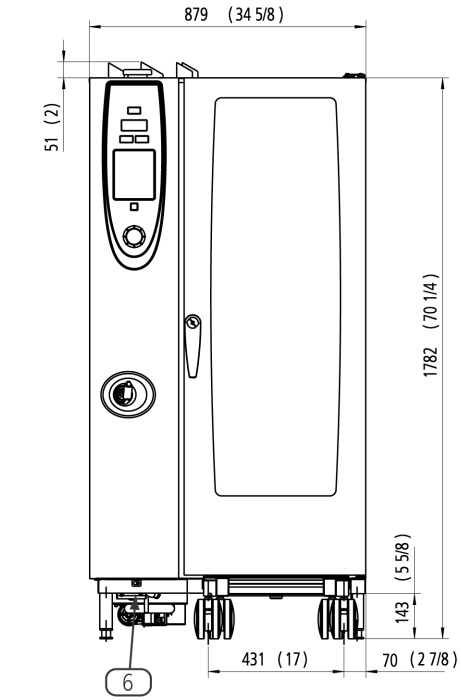


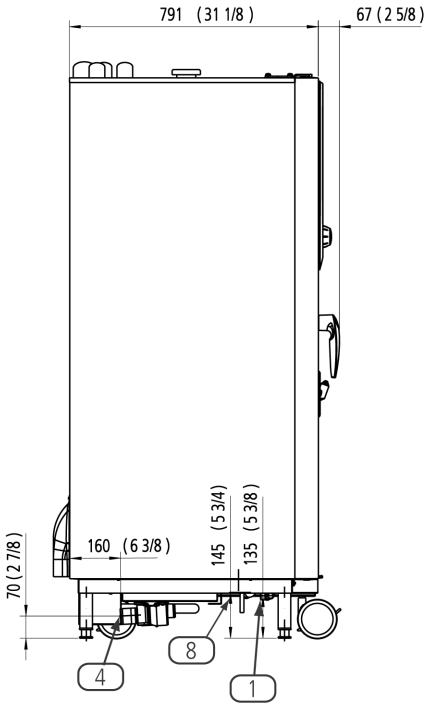


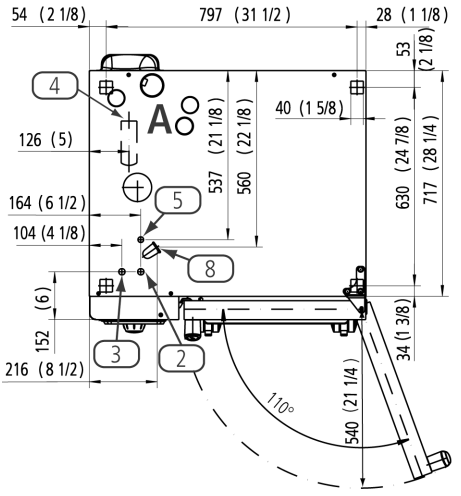


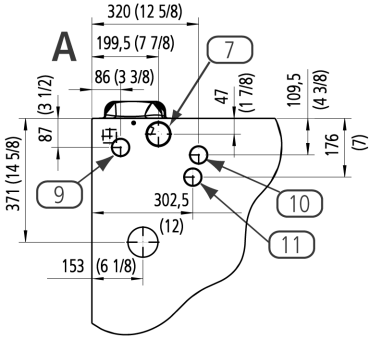
1 = Common water supply (cold water)
2 = Water supply, cold water
3 = Water supply, soft and warm water
4 = Drain
5 = Electrical connection
6 = Earth bonding
7 = Venting pipe DN 70 (2 3/4)
Measures in mm(inch)

Schematic drawing 20x1/1 GN Gas



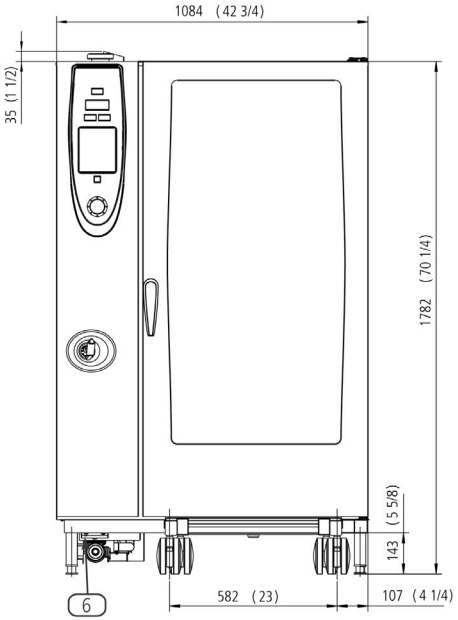


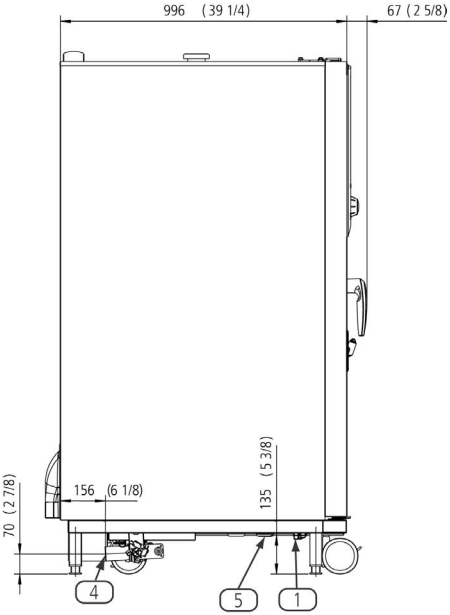


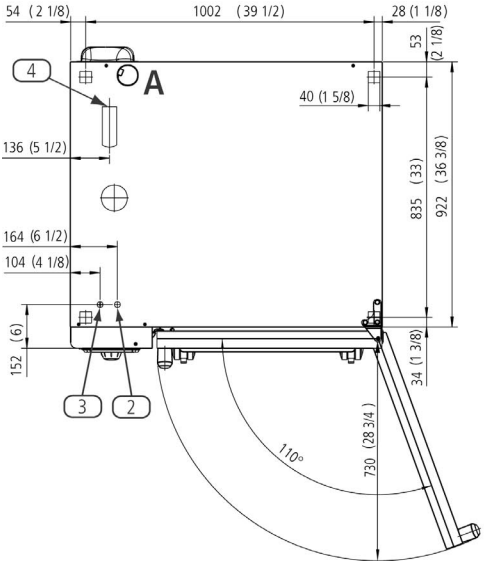


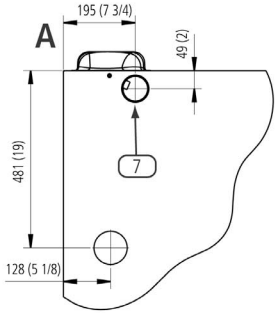
1 = Common water supply (cold water)
2 = Water supply, cold water
3 = Water supply, soft and warm water
4 = Drain, 5 = Electrical connection
6 = Earth bonding7 = Venting pipe DN 70 (2 3/4)
8 = Gas supply 3/4", 9 = Exhaust pipe steam
10/11 = Exhaust pipe hot air
Measures in mm(inch)

Schematic drawing 20x2/1 GN









1 = Common water supply (cold water)
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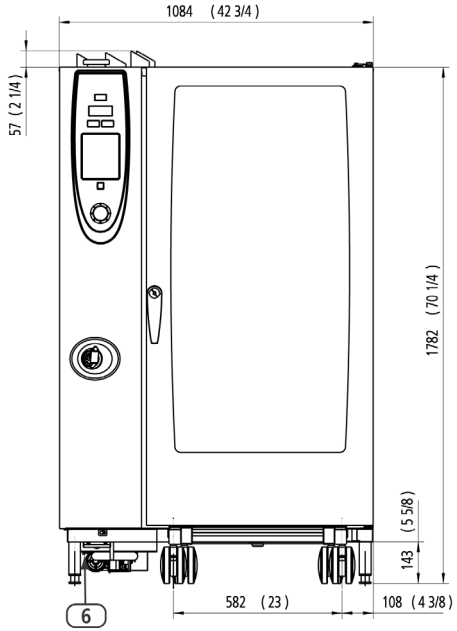
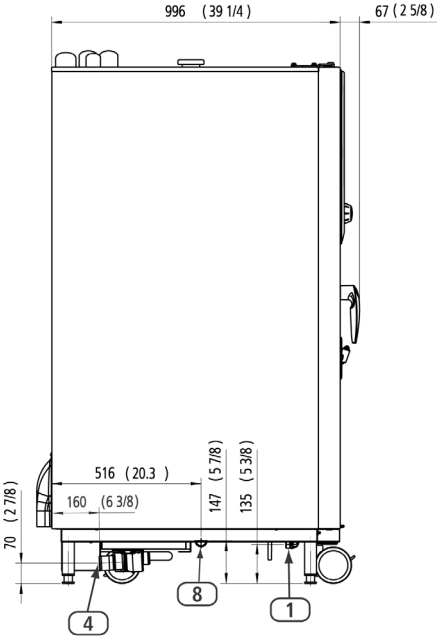
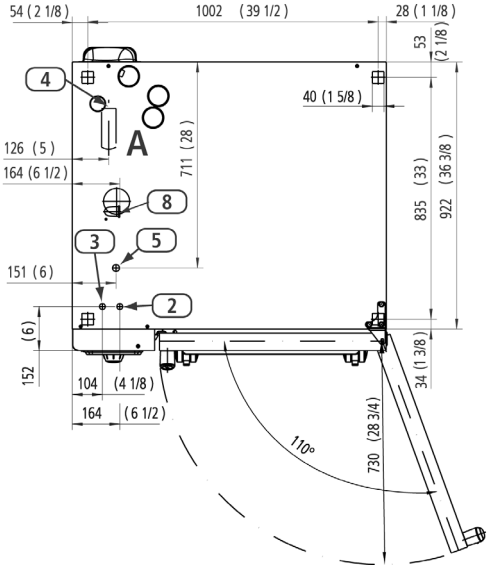
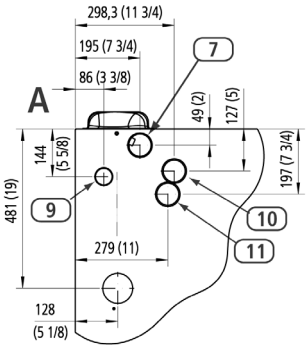
3 = Water supply, soft and warm water
4 = Drain
5 = Electrical connection
6 = Earth bonding
7 = Venting pipe DN 70 (2 3/4)
Measures in mm(inch)

Schematic drawing 20x2/1 GN Gas









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10/11 = Exhaust pipe hot air
Measures in mm(inch)

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